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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,064	03/31/2004	Jyung Chan Lee	5895P053	7871

8791 7590 01/19/2007

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EXAMINER	
LE, THI Q	
ART UNIT	**PAPER NUMBER**
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/815,064	LEE ET AL.	
	Examiner	Art Unit	
	Thi Q. Le	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/31/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/31/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

2. The information disclosure statement (IDS) filed on 03/31/2004 was considered by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1 and 2** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Givehchi (US Patent # 6,826,372)** and in view of **Amoroso, Jr. et al. (US Patent # 4,509,050)**.

Consider **claim 1**, Givehchi clearly discloses, an apparatus for controlling a level of a decision threshold voltage to an optical receiver, said optical receiver converting an input optical signal into an electrical signal (read as, the photodiode 10 converts the optical signal into electrical signal; figure 1) , said apparatus comprising: a voltage detector (read as, the low pass filters 24 and 26, receiving and detecting the voltage level of voltages V+ and V-; figure 1) for branching off part of an output signal from said optical receiver and detecting a corresponding voltage; a differential comparator (read as, combination of differential amplifiers 28 and 30, for comparing the voltage level of V+ and V- with a set point voltage level; figure 1) for comparing said voltage detected by said voltage detector with a reference voltage inputted thereto and outputting the resulting differential voltage; and a voltage controller (read as, set point adjustment circuit 48, for dynamically changing the set point voltage level necessary for reducing the overall bit error rate; figure 4) for controlling said reference voltage to said differential comparator on the basis of a differential voltage between said threshold voltage from said low pass filter and a predetermined voltage corresponding to a predetermined minimum bit error rate; whereby said decision threshold voltage to said optical receiver is controlled such that

it corresponds to said minimum bit error rate (read as, the output from combination differential amplifiers 28 and 30, produce a threshold voltage for limiting amplifier 14; such that, the error rate of detecting "0" and "1" is minimized; figure 1 (figures 1 and 4; column 3 lines 8-45 and column 5 lines 9-19). Givehchi fails to disclose, a low pass filter for filtering said differential voltage from said differential comparator at a predetermined low frequency band and supplying the resulting voltage as said threshold voltage to said optical receiver (read as, the output from combination differential amplifiers 28 and 30 are low pass filtered before they are sent to limiting amplifier 14).

In related art, Amoroso, Jr. et al. disclose a low pass filter for filtering said differential voltage from said differential comparator at a predetermined low frequency band and supplying the resulting voltage as said threshold voltage to said optical receiver (read as, a signal getting differentiated amplified by differential amplifier 18, then pass through a low pass filter 22 before getting send to limiting amplifier 16; figure 1) (figure 1; column 2 line 51 – column 3 line 17)

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Amoroso, Jr. et al. with Givehchi. By adding a low pass filter to the output signal, a steady and constant signal resembling a DC signal is producing instead of an oscillating signal resembling an AC signal. Since passing a signal through a low pass filter produce an output signal that has a constant level, in other words a smoother output signal instead of an oscillating signal.

Consider **claim 2**, Givehchi as modified by Amoroso, Jr. et al. further disclose, wherein said voltage detector includes a second low pass filter (read as, low pass filter 28 and 30, for averaging the output voltage V+ and V- from limiting amplifier 14; figure 1), said second low

pass filter branching off part of the output signal from said optical receiver and filtering the resulting signal at a predetermined low frequency band (figure 1; column 3 lines 20-31).

7. **Claim 3 is** rejected under 35 U.S.C. 103(a) as being unpatentable over **Givehchi (US Patent # 6,826,372)** and in view of **Amoroso, Jr. et al. (US Patent # 4,509,050)** and further in view of **Patterson et al. (US PGPub 2005/0082503)**.

Consider **claim 3**, Givehchi as modified by Amoroso, Jr. et al. disclose the invention as described above, except for, wherein said voltage controller is adapted to receive a photoelectrically converted input voltage from said optical receiver, perform its control operation if a level of the input voltage is higher than or equal to a predetermined signal input determination voltage level, and stop it if the input voltage level is lower than the predetermined signal input determination voltage level.

In related art, Patterson et al. disclose the concept of, a voltage controller (read as, electronic box 24; figure 1) is adapted to receive a photoelectrically converted input voltage from said optical receiver (read as, IR receiver 36; figure 1), perform its control operation if a level of the input voltage is higher than or equal to a predetermined signal input determination voltage level, and stop it if the input voltage level is lower than the predetermined signal input determination voltage level (read as, IR receiver 36 convert the IR signal into voltage signal and send it to the electronic box 24, when the voltage signal is higher than a predetermined threshold value, the electronic box 24 sends a control signal to solenoid valve 26; figure 1) (figure 1 paragraphs 0032-0033).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Patterson et al. with Givehchi as modified by Amoroso,

Jr. et al. With respect to Patterson et al. teachings, the act of control water flow in a faucet by using IR sensors and control box helps to conserve water. In the same way, when data is present in a transmission line, only then will the control box controls other devices within the transmission system; this helps to conserve energy.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Harman, Stephen George; 4,097,697

b) Akimoto et al.; 5,818,620

c) Shih et al.; 6,288,604

d) Ohhata et al.; 6,304,357

e) Han et al.; 6,822,214

f) Moeller, Lothar Benedict Erhard Josef; 2005/0069333

g) Nagatomo et al.; 7,130,546

9. Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Thi Le

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER